ABSTRACT

A combined signal Spc in which a pre-pit signal is superposed on a wobble signal is generated based on a radial push-pull signal Spp with a noise component having been

5   removed therefrom. Based on the combined signal Spc, a wobble signal S_{WB} with the phase $\theta 0$ not having time fluctuation and a pre-pit signal S_{PD} are generated with the phases compared to each other, and then a phase adjustment signal S_{CNT} corresponding to a phase difference θe is generated. The phase differences θe are stored, and an average value θr thereof generated, the phase difference θe is compared to the average value θr, the phase

10    $\theta 0$ is shifted according to only by the phase difference θe only when the phase difference θe is within the range of ($\theta r \pm W$), and then a wobble signal S_{WB} with the phase $\theta 1$ synchronized to the pre-pit signal S_{PD} is generated.